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Explosive Formulation Code Naming SOP

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Disclaimer

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Lawrence Livermore National Laboratory Global Security Principal Directorate **Livermore Explosive Detection Program**	**Standard Operating Procedure**	
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Explosive Formulation Code Naming SOP

Concurrence Technical Leader	Date
Approval IDD Project Principal Investigator	Date

1.0 Purpose

The purpose of this SOP is to provide a procedure for giving individual HME formulations code names. A code name for an individual HME formulation consists of an explosive family code, given by the classified guide, followed by a dash, -, and a number. If the formulation requires preparation such as packing or aging, these add additional groups of symbols to the X-ray specimen name.

2.0 Scope

The scope of this SOP is to explain the code nomenclature, its creation and documentation.

3.0 Definitions

EXD	Explosives Division
HME	Home Made Explosive
LLNL	Lawrence Livermore National Laboratory
TAFRL	Tyndall Air Force Research Laboratory
TSA/OSC	Transportation Security Administration/Office of Security Capabilities
TSL	Transportation Security Laboratory

4.0 Responsibilities

4.1 Roles:

4.1.1 LLNL: Honest Broker, X-ray Physics SME, maintains the TSA Explosives Code Dictionary (a table) linking formulation and preparation and code name, generates code names

4.1.2 TAFL: HME data collection synthesis lab

4.1.3 TSL: Conventional, military and HME data collection synthesis lab

4.1.4 TSA/OSC: End user of data collected under this program

4.1.5 EXD: Technical oversight and data collection process manager, approves code names, communicates code names to all labs. Ensure that labs use appropriate code names.

4.2 The HME Working Group has the overall responsibility and authority for this procedure.

4.3 Original Standard Operation Procedures shall have the signature form completed prior to the effective date.

5.0 Procedure

5.1 The code name for an explosive Formulation has the format *FormulationCode*. The *FormulationCode* has the format *FormulationFamily-IndividualIdentifier*[-*subCategoryNumber*].The subCategoryNumber in the brackets is optional and can be used if a formulation differs from any known formulation (FormulationFamily-IndividualIdentifier) in the quantities or concentrations of any ingredient by less than 5%. This cannot be applied in series. For example:

Ada-1 (a mixture of 50% starting material A and 50% starting material B)

Ada-1 or Ada-1-1 (a mixture of 48% starting material A and 52% starting material B)

Ada-1 or Ada-1-2 (a mixture of 47% starting material A and 53% starting material B)

Ada-2 (a mixture of 44% starting material A and 56% starting material B)

A *FormulationFamily* may describe a precursor, formulation and/or synthesized material.

5.2 Determine that the HME Formulation does not already have a code name by examining the Explosives Code Dictionary. The Explosives Code Dictionary is a classified list of formulations and preparations and their respective code names [DICT]. If a code name already exists, use it and do not generate a new code name if it meets the requirements in 5.1.

5.3 Determine the explosive *FormulationFamily* name from the classified guide [GUIDE]. Formulation code names have a variety of forms. The three most common forms are

5.3.1 Ada-n[-n], where Ada represents the *FormulationFamily;*

5.3.2 AdA-n, where AdA represents the *FormulationFamily* and

5.3.3 Ad-n, where Ad represents the *FormulationFamily.*

5.3.4 where A represents a capital letter, a represents a lower case letter, d represents a number, n is a number that represents the individual member of the explosive family, and [-n] represents an optional subcategorization (perhaps for the addition of stabilizers or for small variations of the formulation that do not merit a new code name). The characters before the dash represent the formulation family code name.

5.4 If the new formulation does not have a counterpart in the Explosives Code Dictionary, determine the highest number indicating an explosive family member.

5.4.1 Add 1 to that highest number to form a new formulation *IndividualIdentifier*.

5.5 If the new formulation is not different enough to warrant its own code name, determine the highest numbered subcategory of the closest explosive.

5.5.1 Add 1 to the highest number to form a new *subcategoryNumber*.

6.0 Records

Implementation of this SOP generates an entry into the Explosive Code Dictionary [DICT].

7.0 Appendices and Attachments

None.

8.0 Review Interval

The interval for formal review of this SOP is five years.

9.0 Document Revision History

Date	Revision	Author	Responsible Manager	Comments
03/25/2016	1.0	Jeff Kallman	Harry E. Martz, Jr.	.

10.0 References

[DICT] (U) TSA Code Dictionary for Detecting Explosive Threats and Precursors, LLNL report COE-2015-0005, April 27, 2015, or updated. (S//SSI)

[GUIDE] “Electronic Baggage Screening Program (EBSP) Requirements for Automated Detection of Explosives,” TSA, DHS, Version 6.0, 10 February 2011.